

5/18/05

Proposed Amendment

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An image processor comprising:

a switch dividing unit which divides configured to divide image data into $m \times n$ pixels, having n lines with m pixels per one line and to transfer each one of the n lines of image data to a predetermined destination;

a storage unit ~~which stores~~ including $(n-1)$ number of memories each configured to store one line of the n lines of the image data of pixels, ~~which are divided by said dividing unit~~ switch;

a control unit ~~which provides a control so as to~~ configured to control the transfer of each one one of the n lines of send the image data of pixels ~~divided by said dividing unit, and the image data stored by said storage unit, respectively, to [[a]]~~ the predetermined destination;

a compression unit ~~which~~ configured to batch compresses compress the image data of $m \times n$ pixels,

wherein said control unit is further configured to control said switch to transfer sends $(n-1)$ lines of the n lines of the image data among the image data of $m \times n$ pixels divided by said dividing unit to the $(n-1)$ number of memories said storage unit, and [[the]] a remaining one line of the n lines of the image data directly to said compression unit; and to control the storage unit to transfer the $(n-1)$ lines of the image data stored in the $(n-1)$ number of memories controls sending of the image data of $m \times (n-1)$ pixels stored in said storage unit to said compression unit.

Claim 2 (Currently Amended): The image processor according to claim 1, wherein the (n-1) number of memories are said storage unit comprises (n-1) number of FIFO (first-in first-out) memories, and

~~said control unit controls sending of each line of the image data divided by said dividing unit to said FIFO memories, respectively.~~

Claim 3 (Withdrawn): An image processor comprising:
an expansion unit which batch expands compressed data, that is, of compressed image data of $m \times n$ pixels;

a storage unit which stores expanded image data by said expansion unit;

a control unit that provides a control so as to send the expanded image data by said expansion unit to a predetermined destination, and the image data stored by said storage unit to a predetermined output destination,

wherein said control unit sends one line of image data, which are expanded by said expansion unit, and comprise m pixels per one line, directly to said predetermined output destination, and image data with the remaining (n-1) lines of pixels to said storage unit; and then controls sending of the image data with (n-1) lines of pixels stored in said storage unit to said predetermined output destination.

Claim 4 (Withdrawn): The image processor according to claim 3, wherein
said storage unit comprises (n-1) number of FIFO memories, and
said control unit controls sending of each line of the image data expanded by said expansion unit to said FIFO memories, respectively.

Claim 5 (Withdrawn): An image processor comprising:

an input unit which inputs compressed data of image data compressed every image data of $m \times n$ pixels;

an expansion unit which batch expands compressed data input by said input unit to the image data of $m \times n$ pixels;

an extraction unit which extracts one line of image data, which comprise m pixels per one line, from image data of $m \times n$ pixels expanded by said expansion unit;

an output unit which outputs one line of image data extracted by said extraction unit;

a detection unit which detects whether one line of the image data has been output or not by said output unit; and

a control unit that provides a control so as of said input and extraction unit,

wherein said control unit inputs the compressed data including the image data again by control of said input unit, when the output of the image data is detected by said detection unit; extracts one line of image data which have not been previously extracted by said extraction unit; and image data of the one line to the n line are sequentially output by repetition of such control.

Claim 6 (Currently Amended): An image processor comprising:

~~a dividing~~ means for dividing image data into $m \times n$ pixels, having n lines with m pixels per one line;

means for transferring each one of n lines of the image data to a predetermined destination;

~~a storage~~ means for storing $(n-1)$ lines of the image data of pixels, which are divided by said dividing means;

~~a control~~ means for ~~providing a control~~ controlling the transfer of each one of the n lines of so as to ~~send the image data of pixels divided by said dividing means,~~ and the image data ~~stored by said storage means, respectively,~~ to ~~[[a]]~~ the predetermined destination;

~~a compression~~ means for batch compressing the image data of $m \times n$ pixels, wherein said ~~control~~ means for controlling controls said means for switching to transfer sends $(n-1)$ lines of the n lines of the image data ~~among the image data of $m \times n$ pixels divided by said dividing means~~ to said storage means for storing, and the remaining one line of the n lines of the image data directly to said ~~compression~~ means for batch compressing; and controls ~~sending of the image data of $m \times (n-1)$ pixels stored in said storage~~ the means for storing to transfer the $(n-1)$ lines of the image data stored in the means for storing to said ~~compression~~ means for batch compressing.

Claim 7 (Currently Amended): The image processor according to claim 6, wherein said storage means for storing comprises $(n-1)$ number of FIFO (first-in first-out) memories, and

~~said control means controls sending of each line of the image data divided by said dividing means to said FIFO memories, respectively.~~

Claim 8 (Withdrawn): An image processor comprising:
an expansion means for batch expanding compressed data, that is, of compressed image data of $m \times n$ pixels;
a storage means for storing expanded image data by said expansion means;
a control means for providing a control so as to send the expanded image data by said expansion means to a predetermined destination, and the image data stored by said storage means to a predetermined output destination,

wherein said control means sends one line of image data, which are expanded by said expansion means, and comprise m pixels per one line, directly to said predetermined output destination, and image data with the remaining $(n-1)$ lines of pixels to said storage means; and then controls sending of the image data with $(n-1)$ lines of pixels stored in said storage means to said predetermined output destination.

Claim 9 (Withdrawn): The image processor according to claim 8, wherein
said storage means comprises $(n-1)$ number of FIFO memories, and
said control means controls sending of each line of the image data expanded by said expansion means to said FIFO memories, respectively.

Claim 10 (Withdrawn): An image processor comprising:
an input means for inputting compressed data of image data compressed every image data of $m \times n$ pixels;
an expansion means for batch expanding compressed data input by said input means to the image data of $m \times n$ pixels;
an extraction means for extracting one line of image data, which comprise m pixels per one line, from image data of $m \times n$ pixels expanded by said expansion means;
an output means for outputting one line of image data extracted by said extraction means;
a detection means for detecting whether one line of the image data has been output or not by said output means; and
a control means for providing a control so as of said input and extraction means,
wherein said control means inputs the compressed data including the image data again by control of said input means, when the output of the image data is detected by said

detection means; extracts one line of image data which have not been previously extracted by said extraction means; and image data of the one line to the n line are sequentially output by repetition of such control.

Claim 11 (Currently Amended): An image processing method comprising the steps of:

dividing image data into $m \times n$ pixels, having n lines with m pixels per one line;
transferring each one of the n lines of the image data to a predetermined destination;
storing one line of the n lines of the image data of pixels, which are divided by said
~~dividing step~~ in each of (n-1) number of memories;
~~providing a control so as to send the image data of pixels divided by said dividing~~
~~step, and the image data stored by said storing step, respectively, to a predetermined~~
~~destination;~~
batch compressing the image data of $m \times n$ pixels,
wherein said ~~providing~~ transferring step transfers sends (n-1) lines of the n lines of the
image data ~~among the image data of $m \times n$ pixels divided by said dividing step~~ to said (n-1)
number of memories ~~storing step~~, and the remaining one line of the n lines of the image data
~~directly to a compression unit said-compressing step, and controls sending~~ transfers the (n-1)
lines stored in the (n-1) number of memories of the image data of $m \times (n-1)$ pixels stored in
~~said storage step~~ to said compressing step compression unit.

Claim 12 (Withdrawn): An image processing method comprising the steps of:

batch expanding compressed data, that is, of compressed image data of $m \times n$ pixels;
storing expanded image data by said expanding step;

providing a control so as to send the expanded image data by said expanding step to a predetermined destination, and the image data stored by said storing step to a predetermined output destination,

wherein said providing step sends one line of image data, which are expanded by said expanding step, and comprise m pixels per one line, directly to said predetermined output destination, and image data with the remaining $(n-1)$ lines of pixels to said storing step; and then controls sending of the image data with $(n-1)$ lines of pixels stored in said storing step to said predetermined output destination.

Claim 13 (Withdrawn): An image processing method comprising the steps of:

inputting compressed data of image data compressed every image data of $m \times n$ pixels;

batch expanding compressed data input by said inputting step to the image data of $m \times n$ pixels;

extracting one line of image data, which comprise m pixels per one line, from image data of $m \times n$ pixels expanded by said expanding step;

outputting one line of image data extracted by said extracting step;

detecting whether one line of the image data has been output or not by said outputting step; and

providing a control so as of said inputting and extracting steps,

wherein said providing step inputs the compressed data including the image data again by control of said inputting step, when the output of the image data is detected by said detecting step; extracts one line of image data which have not been previously extracted by said extracting step; and

image data of the one line to the n line are sequentially output by repetition of such control.